

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, February 2, 1886.

LEONARD WEBER, M.D., Vice-President, in the chair.

Dr. DANA reported a case of total trigeminal paralysis. (See p. 65 of this number.)

DISCUSSION ON DR. DANA'S PAPER.

Dr. SAMUEL SEXTON said that ten years ago it was considered proper to divide the chorda tympani for tinnitus aurium, and it was supposed to have been done. This nerve has a long and circuitous course through the tympanic cavity, and is surrounded by a sheath of mucous membrane liable to inflammation in the acute purulent processes of the ear, especially in children. He had seen and studied a large number of cases in which, owing to acute purulent inflammation there was complete destruction of tympanic contents, including the chorda tympani. There was no alteration of the sense of taste, though the tests to discover such an alteration were carefully made.

An Italian writer has called attention to the chorda tympani as a nerve in intimate connection with speech; that certain word-sounds could not be found when it was absent. But Dr. Sexton's experience had not verified this. Taste was a complex function which was developed slowly by cultivation. When tympanic membrane was absent, so that a probe could touch the inner wall of the tympanum, a variety of reflexes could be evoked, such as vomiting, coughing, sneezing. Secretions, especially in the region of the tonsils and pharynx, were increased, as also the saliva.

Dr. M. A. STARR reported ten cases of total anæsthesia follow-

ing neuralgia of the trigeminus in which there was no loss of taste. In his study of the lesions of the medulla and pons there was no record of loss of taste, though all of the cranial nerves, except the ninth and tenth, were involved. All of which would support the views advanced by the author of this paper.

Dr. A. D. ROCKWELL had seen many cases, and instanced one, in which there was neuralgia of the seventh and fifth pair of nerves accompanied with loss of taste.

Dr. DANA, in closing the discussion, thought the cases cited by Dr. Sexton showed that the chorda tympani does not carry the nerve fibres of taste at all; that they were proof that they must take another course from that described by most of the text-books. It hardly seemed probable that they had so complicated an arrangement as that claimed by Gowers, which he showed by means of a diagram.

VASO-MOTOR NEUROSES.

Dr. M. ALLEN STARR, the author of the paper, said that under this title it was intended to include a series of disturbances of circulation and nutrition whose causation could be traced to disorders of the nervous system. He selected this subject because it was one which had been somewhat neglected in the discussions of this society, and because no definite summary of the present state of knowledge of the physiology of the vaso-motor action had lately been presented, and because he had lately seen a number of cases which might be classed together under this title, and which he wished to have discussed by the members present.

Disturbances of the circulation might occur in any part of the body, and were to be regarded not as distinct diseases of the parts in which they occurred, but as symptoms of lesions of the peripheral, or sympathetic, or central nervous systems. At the present time, however, it was impossible to make a pathological classification of these symptoms, and therefore they might be discussed together. In treating of the subject of vaso-motor neuroses the discussion of the physiology and pathology of the vaso-motor system could be united to advantage.

Since changes in the force and frequency of the heart's action and variations in the total amount of blood in the body affect the body as a whole, the state of the circulation in any one organ or part depends largely upon the degree of contraction or dilatation of its vessels. This is known as the local vascular tone. It is

under the control of the system of nerve ganglia, with their subservient fibres which are found in the smaller arteries. The energy expended by these ganglia is manifested by a constant contraction of the circular muscular coat of the artery, a contraction which is constantly opposed by the dilating force exercised by the blood pressure within the vessel. In a state of health an exact equipoise between these forces never occurs. Variations, however, in the vascular tone are produced either by local influence or by influences reaching the ganglia from a distance through the vaso-constrictor or vaso-dilator fibres. The constant manifestation of energy in the maintenance of arterial tone does not have its only source in the local ganglia, but is derived partly from the central nervous system through the vaso-constrictor nerves. Here the experiments of Claude Brenard were detailed. From these experiments it was concluded that a dilatation of the vessels follows, 1, a paralysis of the local ganglia in their walls; 2, separation of these from the sympathetic ganglia; 3, a destruction of the sympathetic ganglia; 4, a separation of these from the spinal cord by a division of the anterior spinal nerve roots; 5, a disintegration of the cord; 6, a separation of these centres from the medulla; 7, the destruction of the medulla oblongata.

The action so far considered has been wholly of a vaso-constrictor kind, and the dilatation mentioned has been due to a suspension of constrictor energy normally passing outward. This is a passive dilatation. But further experiments have shown that another kind of dilatation may be produced, due to an impulse of an active kind sent to the local ganglia by the vaso-dilators. This is an inhibitory impulse arresting the constrictor action of the ganglia in the vessel walls in spite of the continued energy sent them from the central nervous system by the constrictors. Here the experiments on vaso-motor dilatation were given, and the various theories of the mechanism of dilatation in the vessel walls, it being concluded that there was no mechanism in the wall which could produce a dilatation, and that a dilatation was due wholly to the blood pressure within overcoming constrictor action.

The subject of vaso-motor reflexes was then taken up, and it was shown that the seat of these reflexes was in the dorsal region of the spinal cord, since all vaso-constrictors and vaso-dilators can be traced to that region. The particular area of the spinal cord covering these reflexes was thought to be the gray matter surrounding the central canal and including the fascicular columns

of Clarke. As bearing on this point the author referred to the observations by Jacobovitch, Schultze, and Fürstner. It was impossible to say from these cases whether vaso-motor functions are located in the column of Clarke or in the gray matter around the central canal, or in both.

Vascular tone of the thoracic and abdominal organs is regulated by centres in the pons and medulla. Experiments of Bernard were related, and cases of diabetes mellitus and diabetes insipidus produced by lesion of the medulla and pons were mentioned. The influence of the vaso-motors in the production of functional disturbance, disorders of the stomach and intestines was alluded to.

From this review of physiological experiments and pathological facts, it becomes evident that the disturbances of vascular tone, which are included under the title vaso-motor neuroses, may be produced by many different causes acting upon many different organs. The author here mentioned a number of possible causes and their location, after which he gave the histories of seven cases of vaso-motor neuroses, with remarks on the same. These cases seemed to illustrate some of the conditions which have still to be classed under the term vaso-motor neuroses, from want of a more perfect knowledge of their nature. They appear to be little noticed in the books, and rarely discussed in societies; but they certainly merit careful study, in as much as they require cautious and scientific treatment.

DISCUSSION ON DR. STARR'S PAPER.

Dr. SACHS thought that some statements made by Dr. Starr elucidated some obscure points in experiments (published in *Pflüger's Archiv für Phys.*, 1881) which he made several years ago, on animals, to discover the relation of the spinal cord to the secretion of the kidneys. Eckhardt had stated that section of the cervical spinal cord had the same effect as section of the medulla—that is, to inhibit the secretion. These experiments were difficult because of the necessity of keeping up artificial respiration, but they showed that urine was secreted as in health, though somewhat diminished in quantity. That it was actually secreted was proved by introducing chemical substances into the blood, the coloring matter of which was shown in the urine secreted. The inhibition of renal secretion, observed by Eckhardt, Dr. Sachs thought, was due to the peripheral irritation, caused by laying bare the ureters, which interfered with the secretion of the kidneys.

He asked Dr. Starr what views he advanced with reference to the course of the vaso-constrictor nerves.

Dr. STARR replied that one theory was that they passed from the lateral tracts of the cord through the fourth, fifth, and sixth cervical into the sympathetic system, and thence to the viscera. Another was that they entered the sympathetic as far down as the level of the first dorsal. There was an intimate connection with the kidney. Experiments high up in the cord would of course produce diabetes.

Dr. SACHS said that in his experiments high up in the cord there was no diabetes.

Dr. C. L. DANA considered himself indebted to Dr. Starr for so able a paper. The local vaso-motor ganglia had been assumed to exist, but had never been satisfactorily demonstrated as physiological entities. Vaso-motor disturbances were common as symptoms, and were so considered rather than as a distinct disease. In this class of cases were those vaso-motor troubles of the extremities, such as *digiti mortui*, and mild types of renal disease; an independent disorder, flushing of the ears; Basedow's disease and diabetes, which should also be ranked among these. It gave rise to confusion to consider the vaso-motor system as independent, in the same way as the sympathetic system, forgetful of the relation of both of these to the cerebro-spinal.

Dr. WEBER spoke of the connection of sciatica with diabetes. While sugar is found in the urine of patients suffering from protracted sciatica, there were few cases of well-developed diabetes in which there was sciatica. He related three cases of sciatica in which there had been sugar in the urine, and the attending symptoms of diabetes. He had seen cases where sugar was present *after* sciatica; but he was doubtful if cases of true diabetes were developed by sciatica.

Dr. STARR, in closing the discussion, remarked that the vaso-motor local ganglia had been very recently demonstrated by French physiologists in frogs, rabbits, and cats. He did not intend to give the impression that sciatica caused glycosuria, but referred to those cases, quite a number of which were on record, where there was a sudden appearance of sugar in the urine which afterward disappeared.